A NOTE ON TOXIC CHROMATOPSIA AND TOXIC HYSTERIA.*

BY G. E. DE SCHWEINITZ, A.M., M.D.,

PHILADELPHIA.

Colored vision as a symptom of santonin poisoning is well known; more rarely it develops under the influence of nitrite of amyl, picric acid, chromic acid, digitalis and carbonic acid. According to Simi, it may be associated also with tobacco-alcohol amblyopia. In his case the xanthopia lasted from twilight to sunrise, and it and the other symptoms were cured by total abstinence from tobacco and alcohol. I have never observed this symptom in toxic amblyopia until recently, and I desire to present for your consideration an account of the case:

Mr. S. T. B., a retired merchant, born in this country, presented himself for treatment on the 30th of August, 1898.

History.—The patient is married, has healthy children and grandchildren, and gives no account of specific infection. Two years ago, following an attack of influenza or malaria (it is uncertain which), he developed gastro-intestinal catarrh, attended with a great deal of flatulency and nervous weakness. Dr. Da Costa, his physician at that time, informs me that the urine contained an excess of uric acid, but neither albumin nor sugar; also, there was no ocular disturbance, at least none was spoken of. This catarrh still gives him some pain and concern, but he appears cheerful, sleeps well, and has no business worries. There is a history of a fall on his back from a coach, but no present traces of injury. From the time he was eighteen years old he has smoked freely, never less than six or seven cigars a day, but he has never used intoxicating drinks, not even beer. For a number of years he also chewed tobacco, but he has discontinued this habit since 1874. Occasionally at night, by direction of his doctor, he has taken a tablespoonful of hot whisky to relieve stomachic pain. This dose, however, has been of rare occurrence.

He first observed "poor vision" in his left eye in 1864, and from his account one would suppose that the visual defect should be classified as a congenital amblyopia. Decided visual disturbance began in the left eye, he maintains, eleven years ago, when it was inflamed, and after this inflammation had passed away his sight was even more defective than formerly. The doctor who attended him at that time, but who has kept no notes of his case, writes that the inflammation was an iritis; but there are no remains of this disease to be found in the eye.

---

*Read before the Ophthalmic Section of the *College of Physicians of Philadelphia*, November 5, 1898.

The right eye, the patient asserts, performed its functions well and usefully until eight weeks before he consulted me; or, in other words, until the first part of June, 1898, when he was attracted by a phenomenon which resembled smoke before his eyes; at first bluish, but soon changing to a yellow or orange-yellow color, which he compared to the smoke rising from the chimneys of the zinc works in the town in which he lived. This smoke is of a rich orange-yellow color.

Examination.—In the right eye V. = 6/15 + 4.50 M. = 1 at 25 cm. The pupil reactions are normal; the media are clear; the optic disc is round and slightly congested, with the exception of a small quadrant on the temporal side, which is somewhat paler than the rest of the surface; the central lymph sheaths are full, the veins and arteries about normal in size and there are no macular changes.

In the left eye V. = sees hand move. The pupil reactions are normal; the media are clear; the disc is slightly more flushed than the one upon the opposite side but contains no patch of pallor. In other respects the ophthalmoscopic appearances are similar to those of the right side.

The urinary analysis was as follows:

No. 1.

Color	amber.
Reaction	acid.
Sp. gravity	1022.
Albumin	none.
Sugar	none.
Urea	grs. 9.10 to ℥ i.
Chlorides	normal.
Phosphates	excess.

Micrococci ureae.
Bacterium termo.
Crystals of phosphates.
Epithelial cells, some of which are granular.
One epithelial cast.

No. 2.

Color	amber.
Reaction	alkaline.
Sp. gravity	1017.
Albumin	none.
Sugar	none.
Urea	grs. 8.64 to ℥i.
Chlorides	normal.
Phosphates	excess.

Micrococci ureae.
Bacterium termo.
Crystals of triple phosphates.
Epithelial cells.
No casts.

The peripheral visual field of the right eye was not far from normal and the color fields occurred in their normal sequence, perhaps slightly contracted There was a typical central scotoma for red and green, capped by an area of imperfect color perception. Its dimensions were: outward, 20°; upward, 7°; inward, 3°; downward, 5°.

In the left eye the peripheral light field, taken with a small flame, was perfectly normal. Perception of any color was denied, although the differenc between a white and a black test-object could be noted, except in the centra area of the field where the white test-object disappeared absolutely within th area of a scotoma which was sharply outlined as follows: Outward, 18°; upward, 9°; inward, 3°; downward, 4°.

The diagnosis of amblyopia due to tobacco acting as a poison on a man whose system was depressed by gastro-intestinal catarrh seemed clear enough, and the patient was advised to discontinue smoking absolutely and to take for a time iodide of potassium and bichloride of mercury and later strychine.

The patient returned on the 21st of October, 1898, or nearly two months later, with the statement that he was considerably better. He confessed that occasionally he had lighted a cigar and taken "a few whiffs," but maintained that this practice occurred only once or twice a week. The vision of the right eye was now 6/10 and moderate sized print could be read easily with a + 3 D.; that of the left eye remained unchanged. The yellow vision, although still present, had become very faint. No attempt was made to map the scotomas at this examination. The treatment was continued and the patient directed to abstain entirely from tobacco.

He returned two weeks later with the statement that his vision had much improved, that the chromatopsia had practically disappeared and in its place there was only a slight shimmering in the atmosphere, as when waves of heat pass through the air. In the former scotoma-area of the right visual field there was restoration of the red-green sense, except at the culmination spot of the scotoma where red looked "yellowish" and green "of a lighter color." Vision with + 0.50 D. was 6/6, and with proper presbyopic correction added, J. 1 was read at 33 cm. There was no change in the appearance or apparently in the vision of the left eye, with which the patient maintained he saw nothing but shadows.

A careful series of tests was then made with the ordinary methods for detecting feigned monocular blindness and the patient promptly responded to each one of them. With Harlan's test it was readily demonstrated that he saw with his left eye just as well as he did with his right, reading exactly the same letters. The ease with which this demonstration was made so astonished me that I repeated it over and over again, modifying it in various ways, always with the same result.

The left side of the face, certainly the left side of the forehead, while not absolutely anesthetic, showed diminished sensation. Anesthesia of the entire half of the body, however, could not be demonstrated. There were no particular changes in the knee-jerks, the station was not anomalous, nor were there noticeable fibrillary contractions.

In this interesting case there appears to be an association between toxaemia and hysteria. It is well known that the so-called hysterical lead paralysis is common enough in lead factories, its subjects being affected with hemianesthesia, amblyopia on the same side, anosmia on the opposite side, dyschromatopsia and reversal in the color lines. Goinou, who has made a very good study of these cases, thinks that many other toxic agents can originate an hysterical condition, for example, alcohol, mercury, bisulphide of carbon and probably nitrobenzol, and that the patients will suffer from hemianesthesia, restriction of the visual field and similar conditions, and can be cured by remedies of indifferent potency, or even by suggestion. I know of no reason why tobacco should not be added to this list. I regret to say that I did not try the effect of suggestion or indifferent remedies, but gave very honest doses of iodide of potassium, bichloride of mercury and strychnia, as I did not in the least suspect either an hysterical element, or that the blindness was feigned, before the tests to detect pretended amblyopia were made.

It is interesting to observe that, if the patient's clinical history is correct, apparently he has disassociated the left eye from the visual act for at least eleven years, because one would hardly credit this patient with malingering; indeed, there is nothing to render such a course on his part necessary, either now or in times past, and although the fact that he saw with the left eye was developed by the ordinary tests for feigned blindness, they do not necessarily mean that the blindness was feigned. It is probable in these cases, as has been pointed out, that the subject really sees, but that the impulses coming from the periphery are not properly recorded until something takes place which places the burden of the visual act upon the supposed blind eye. Be this as it may, the record of the case seemed worthy as an interesting clinical observation, not only on account of the association of what may be called hysteric and toxic elements, but chiefly on account of the very rare phenomenon of colored-vision under these circumstances. It goes without saying that no question suggested to this patient to describe colored-vision. It was for this that he sought advice and his descriptions were given without the slightest prompting.